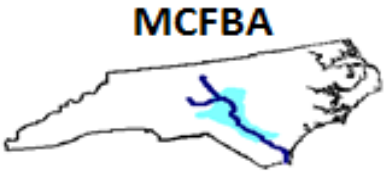
Memorandum of Agreement
Among
The State of North Carolina's Division of Water Resources,
The Middle Cape Fear Basin Association Permittees,
and
The Middle Cape Fear Basin Association



Effective:
November 1, 2018 through October 31, 2023
Revision: 10-2020

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (MOA) is entered into this 1st day of November 2018, by and among the NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY'S DIVISION OF WATER RESOURCES (DWR), the NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGERS in the Middle Cape Fear River Basin who have voluntarily executed this MOA (MCFBA PERMITTEES), and the MIDDLE CAPE FEAR BASIN ASSOCIATION (MCFBA), a non-profit corporation whose members include the MCFBA PERMITTEES (see Table 1).

WITNESSETH, THAT,

Whereas, the MCFBA Permittees have instream (e.g., upstream and downstream) monitoring requirements in their respective NPDES permits pursuant to Federal and State law.

Whereas, the DWR has obligations to collect water quality data, which it uses for various purposes, including but not limited to enforcement, regulatory, scientific, and educational purposes.

Whereas, DWR has discretion in determining instream sampling locations in the context of NPDES permitting.

Whereas, all parties to this MOA benefit from the collection of instream water quality data in the Middle Cape Fear Basin.

NOW, THEREFORE, in consideration of mutual benefits that will accrue to each party, the parties agree as follows:

Purpose:

- The purpose of this MOA is to:
  1) facilitate the collection of instream water quality data for parameters that are of interest to all parties to this MOA;
  2) facilitate the collection of instream water quality data at preferred sampling locations (i.e., to reduce duplicative sampling locations and to sample at locations that would otherwise not be sampled);
  3) facilitate the collection of instream water quality data at frequencies that provide useful information to all parties to this MOA;
  4) leverage the resources available to the parties of this MOA for instream sampling; and
  5) provide all parties with consistent and robust instream water quality data for the Middle Cape Fear Basin.

General Provisions:

- This MOA only applies to the collection and submission of instream water quality monitoring data for the parameters, locations, and frequencies identified in Table 2.

- Nothing in this MOA precludes DWR from requesting MCFBA Permittees or MCFBA to take additional samples. Similarly, there is nothing in this MOA that precludes MCFBA Permittees or MCFBA to voluntarily conduct and submit sampling data to NDWR in addition to what is set forth in Table 2, including hardness and emerging contaminants.

- This MOA does not relieve MCFBA Permittees from complying with other NPDES permit

requirements, including influent and effluent monitoring requirements, or other Federal and State laws, including State water quality standards.

- By signing this MOA, the MCFBA PERMITTEES authorize the MCFBA to act as their agent and on their behalf in collecting and submitting instream monitoring data to DWR for the parameters listed in Table 2.

- The MCFBA PERMITTEES are exempted from instream water quality monitoring for certain parameters *as specified in their individual NPDES permits*. If there is any discrepancy or conflict between this MOA and an MCFBA Permittee's NPDES permit, the MCFBA Permittee's NPDES permit shall prevail.

Collection of instream water quality data:

- The MCFBA and its agents shall perform the collection and analyses of the instream water quality monitoring data for the parameters, locations and frequencies specified in Table 2 of this MOA.

- The MCFBA will contract for the performance of the monitoring activities with a laboratory appropriately certified by DWR for the required laboratory and field analysis.

- The MCFBA and its agents shall comply with the requirements and protocols set forth in Tables 3 and 4 located in Appendix A.

Submission of (monthly) instream water quality data to DWR:

- The MCFBA shall submit the monitoring results to DWR on behalf of MCFBA PERMITTEES.

- The MCFBA shall submit the water quality data to the DWR within 90 days of the end of the month in which the sampling was performed to the Coalition Coordinator at coalitioncoordinator@ncdenr.gov.

- The MCFBA or its agents shall submit the water quality data to the DWR in a format set forth in Table 5 located in Appendix B of this MOA and preferably in Microsoft® Excel.

- The MCFBA shall archive all data for five (5) years.

- The MCFBA PERMITTEES may provide comments to DWR on data and work submitted by MCFBA to DWR.

- Failure by the MCFBA PERMITTEES or the MCFBA or their agents to collect or analyze the water quality data as described in this MOA, or to provide data to the DWR in the required format, may result in the termination of this MOA by the DWR and the return to individual upstream and downstream monitoring requirements, as specified in the individual NPDES permits for each of the MCFBA PERMITTEES.

- Special and/or additional data collected (i.e., hardness) at a designated monitoring station concurrently with the regularly scheduled samples, should be submitted to the Coalition Coordinator

Annual Report:

- The MCFBA shall submit an annual written report that summarizes the previous calendar year's sampling activities.

- The MCFBA shall submit the annual report no later than April 30th each year that this MOA is in effect and shall comply with the requirements set forth in Appendix B.

- The MCFBA shall submit the annual report to the DWR Coalition Coordinator at 1621 Mail Service Center, Raleigh, NC 27699-1621 or electronically at coalitioncoordinator@ncdenr.gov.

Signatures for all Submissions to DWR:

- The MCFBA Chair shall sign/certify all data and annual reports submitted to DWR pursuant to this MOA.

Special Circumstances effecting sampling:

- Stream sampling under this MOA may be discontinued under the following circumstances:
  1) If flow conditions in the receiving waters and/or extreme weather conditions will result in a substantial risk of injury to the person(s) collecting samples; or
  2) If environmental conditions, such as a dry stream, prevent sample collection.

- If sampling is discontinued for any reason, the MCFBA shall provide a detailed written explanation to DWR explaining why sampling was not performed. The written explanation shall be submitted to the DWR Coalition Coordinator with MCFBA's monthly data submittal.

- If sampling is discontinued under the provisions above, MCFBA shall resume stream sampling as soon as possible.

Modification:

- This MOA may be modified by the written consent of the DWR and the MCFBA. Either DWR or the MCFBA may determine that it is necessary to request changes in monitoring frequency, parameters, and/or sampling locations. Any changes to sampling parameters, locations, or frequencies shall be made by a written amendment to this MOA agreed to by the DWR, the MCFBA PERMITTEES, and the MCFBA. The amendment shall be signed by the MCFBA chair and by the DWR Director. Such amendments may be entered into at any time.

New Parties to this MOA:

- The following additional NPDES permit dischargers may enter into this MOA subsequent to the effective date hereof:
  1) Dischargers who receive a NPDES permit within the Middle Cape Fear River Basin, or
  2) Dischargers who have NPDES permits within the Middle Cape Fear River Basin but are not parties to this Agreement.

- The addition of such dischargers to this MOA may be made only with the consent of the DWR, the MCFBA PERMITTEES, and the MCFBA and shall require a written amendment to this MOA signed by the MCFBA chairperson, by the DWR, and by an authorized representative of any such discharger who wishes to enter into the MOA. The DWR will not unreasonably withhold consent to the addition of a discharger to the MOA. The DWR will consider modification of the existing monitoring program described in this MOA for the addition of a NPDES permit discharger to the MOA. Such amendments may be made at any time that this MOA is in effect. The MCFBA PERMITTEES included in this MOA are listed in Table 1.

Term:

- This MOA shall be effective upon the signature shall be effective until October 31, 2023 unless extended by the consent of both the DWR Director and the MCFBA.

Withdraw/Termination as between DWR and MCFBA:

- Upon sixty (60) days written notice, the DWR or the MCFBA may terminate this MOA for any reason. Upon termination of this MOA, the monitoring requirements contained in the individual NPDES permit for each MCFBA PERMITTEE shall become effective immediately.

Withdraw/Termination as between DWR and individual MCFBA Permittees:

- An individual permit holder may withdraw and cancel its participation in this MOA by providing sixty (60) days written notice to the MCFBA, and sixty (60) days written notice to the DWR Coalition Coordinator, the appropriate DWR Regional Office(s), and the DWR Water Quality Permitting Section. The monitoring requirements contained in the individual NPDES permit shall become effective upon the termination date specified in the notice.

- The withdraw of an individual MCFBA Permittee shall require a written amendment to this MOA signed by the MCFBA chair and by the DWR Director.

- In the event a permit holder terminates or cancels its participation in this MOA or its membership in the MCFBA is terminated for any reason, the MCFBA may request that DWR review the monitoring plan described in this MOA for a possible reduction in sampling effort and/or requirements.

No limitation on use of the data:

- There are no limitations on DWR's, MCFBA, or MCFBA Permittee's use of the data collected under this MOA.

Entire Agreement:

- This MOA constitutes the entire agreement between the parties and supersedes all previous agreements.

Incorporation:

- Appendices A and B are attached to and incorporated into this MOA.

Savings Clause:

- Should any part of this Agreement be declared invalid or unenforceable by a court of competent jurisdiction, invalidation of the affected portion shall not invalidate the remaining portions of the Agreement and they shall remain in full force and effect.

Remedies for Breach:

- The only remedy for breach of this MOA is an action for specific performance or injunction.

IN WITNESS WHEREOF, the parties have caused the execution of this instrument by authority duly given, to be effective as of the date executed by the DWR.

DIVISION OF WATER RESOURCES

By: *Signature on file*
Linda Culpepper
Director
Division of Water Resources

Date:10/29/2018

MIDDLE CAPE FEAR BASIN ASSOCIATION

By: *Signature on file*
Kenny Fail
Chair
Middle Cape Fear Basin Association

Date: 9/11/2018

Table 1 – MCFBA Permittees

NPDES Permit Number	MCFBA Permittees and Facilities	Authorized Representative and Title	Authorized Representative Signature
NC0001121	Danaher Controls – Danaher Controls WWTP	Sally Creasy, Plant Manager	*Signature on file*
NC0003433	Duke Energy – Cape Fear Steam Electric Power Plant	Issa Zarzar, Plant Manager	*Signature on file*
NC0003573	Chemours, Fayetteville Works – Chemours WWTP	Brian D. Long, Plant Manager	*Signature on file*
NC0003719	DAK Americas	Matthew Hendrickson, Site Operations Director	*Signature on file*
NC0007684	Harnett County Utilities – Harnett County WTP	Steve Ward, Director of Public Utilities	*Signature on file*
NC0021636	Harnett County Utilities – North Harnett Regional WWTP	Steve Ward, Director of Public Utilities	*Signature on file*
NC0023957	Public Works Commission – Cross Creek WRF	Mick Noland, Director of Public Works	*Signature on file*
NC0026514	City of Raeford – Raeford WWTP	Trudy McVicker, Operations Manager	*Signature on file*
NC0026671	Town of Elizabethtown – Elizabethtown WWTP	Hugh Bledsoe, Director of Public Works	*Signature on file*
NC0030970	Town of Spring Lake – Spring Lake WWTP	Danny Gerald, Town Manager	*Signature on file*
NC0038831	Carolina Water Service – Carolina Trace WWTP	Matthew Klein, President	*Signature on file*
NC0039586	Duke Energy – Shearon Harris Nuclear Plant	Tanya M. Hamilton, Vice President	*Signature on file*
NC0043176	City of Dunn – Dunn Black River WWTP	Steven Neuschafer, City Manager	*Signature on file*
NC0050105	Public Works Commission – Rockfish Creek WRF	Mick Noland, Director of Public Works	*Signature on file*
NC0059242	Town of Broadway – Broadway WWTP	Dustin Kornegah, Town Manager	*Signature on file*
NC0063096	Town of Holly Springs – Utley Creek WRF	Seann Byrd, Director of Water Quality	*Signature on file*
NC0076783	Public Works Commission – PO Hoffer WTP	Mick Noland, Director of Public Works	*Signature on file*
NC0078344	Smithfield Fresh Meats Corporation – Smithfield Fresh Meats Corporation WWTP	Donovan Owens, General Manager	*Signature on file*
NC0078955	City of Dunn – Dunn A.B. Uzzle WTP	Steven Neuschafer, City Manager	*Signature on file*
NC0088366	Harnett County Utilities – South Harnett Regional WWTP	Steve Ward, Director of Public Utilities	*Signature on file*
NC0088846	Western Wake WRF	Jamie Revels, Utilities Director	*Signature on file*
NC0089915	Chemours, Fayetteville Works – Chemours WWTP	Brian D. Long, Plant Manager	*Signature on file*

Table 2
MCFBA Sampling Stations, Parameters, & Frequencies

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	[1]Field Measurements	[2]Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform	Hardness
B6130500	Lick Creek at SR 1500 nr Corinth	voluntary station	35.5592	-79.0550	Lee	RRO	03030004	WS-IV	18-4-(2)	Q	Q	Q	Q		Q	
B6160000	Cape Fear River at NC 42 nr Corinth	above Buckhorn dam, former DWQ ambient stn, dns Duke Energy facility	35.5491	-79.0246	Chatham	RRO	03030004	WS-IV CA	18-(4.5)	M + 2SM	M	M	M	M	M	Q
B6204000	Buckhorn Crk by SR 1921 Buckhorn Rd nr Corinth	below Harris Lake, dns Shearon Harris Steam Electric Plant, USGS gage	35.5435	-78.9899	Chatham	RRO	03030004	C	18-7-(11)	M	M	M	M		M	
B6215000	Cape Fear River at Captains Landing nr Cokesbury	dns of Western Wake WRF	35.4871	-78.9516	Harnett	FRO	03030004	WS-IV	18-(10.5)	M + 2SM	M	M	M		M	Q
B6230000	Avents Creek at SR 1418 nr Cokesbury	voluntary station	35.4875	-78.9094	Harnett	FRO	03030004	WS-IV HQW	18-13-(2)	Q	Q	Q	Q		Q	
B6252000	Neills Creek at US 401 nr Lillington	dns Kenneth Creek	35.4281	-78.8240	Harnett	FRO	03030004	WS-IV	18-16-(0.7)	M	M	M	M		M	
B6320000	Kenneth Creek at SR 1441 Chalybeate Springs Rd nr Angier	dns of Fuquay-Varina WWTP and Senter's Rest Home	35.5144	-78.7862	Harnett	FRO	03030004	WS-IV	18-16-1-(2)	Q	Q	Q	Q		Q	
B6370000	Cape Fear River at US 401 at Lillington	ups Harnett WWTP, Buies Creek WWTP, Angier WWTP, DWQ ambient	35.4067	-78.8149	Harnett	FRO	03030004	WS-IV	18-(16.7)	M + 2SM	M	M	M		M	Q
B6485000	Buies Creek at Keith Hills Golf Course	voluntary station	35.3907	-78.7527	Harnett	FRO	03030004	WS-IV	18-18	Q	Q	Q	Q		Q	
B6820050	Upper Little River at SR 1222 Broadway Rd nr Broadway	dns Carolina Trace WWTP	35.4067	-79.0628	Harnett	FRO	03030004	C		M	M	M	M		M	
B6830000	Upper Little River at SR 2021 Titan Roberts Rd nr Lillington	DWQ ambient stn	35.3266	-78.7237	Harnett	FRO	03030004	WS-IV	18-20-(24.5)	M	M	M	M		M	
B6840000	Cape Fear River at NC 217 at Erwin	dns Erwin WWTP, ups Dunn WWTP, former DWQ ambient stn	35.3121	-78.6932	Harnett	FRO	03030004	WS-V	18-(20.7)	M + 2SM	M	M	M		M	Q
B7300000	Lower Little River at NC 210 nr Spring Lake	dns Spring Lake WWTP	35.2021	-78.9530	Cumberland	FRO	03030004	C	18-23-(24)	M	M	M	M		M	Q
B7319100	Lower Little River at SR 1609 West Reeves Bridge Rd nr Walkertown	dns South Harnett WWTP	35.2598	-78.8231	Cumberland	FRO	03030004	C		M	M	M	M		M	
B7480000	Cape Fear River at Hoffer WTP intake at Fayetteville	ups Cross Creek WWTP	35.0825	-78.8638	Cumberland	FRO	03030004	WS-IV CA	18-(25.5)	M + 2SM	M	M	M		M	Q
B7500000	Cape Fear River at I-95 below Fayetteville	dns Cross Creek WWTP	34.9830	-78.8480	Cumberland	FRO	03030004	C	18-(26)	M + 2SM	M	M	M		M	Q
B7584900	UT to Cross Creek at Cross Creek WRF Fayetteville	voluntary station	35.0599	-78.8647	Cumberland	FRO	0303004	C	18-27-(3)	Q	Q	Q	Q		Q	
B7590000	Cross Creek at Bus NC 301/Bus I-95 in Fayetteville	voluntary station	35.0547	-78.8625	Cumberland	FRO	03030004	C	18-27-(3)	Q	Q	Q	Q		Q	

Station Number	Location Description	Station Comments	Latitude	Longitude	County	Region	8 Digit HUC	Stream Class	Index	[1]Field Measurements	[2]Nutrients	Lab Turbidity	TSS	Chl-a	Fecal Coliform	Hardness
B7679300	Rockfish Creek at US 401 bypass nr Raeford	ups Raeford WWTP, USGS gage	34.9995	-79.2148	Hoke	FRO	03030004	B	18-31-(12)	M	M	M	M		M	Q
B7700000	Rockfish Creek at SR 1432 Golf Course Rd nr Raeford	dns Raeford WWTP, DWQ ambient stn	34.9680	-79.1100	Hoke	FRO	03030004	B	18-31-(18)	M	M	M	M		M	
B8230000	Rockfish Creek at NC 87 nr Fayetteville		34.9561	-78.8441	Cumberland	FRO	03030004	C	18-31-(23)	M	M	M	M		M	
B8290000	Cape Fear River at Chemours intake ups of L&D3	dns DAK Americas and Rockfish Creek WWTP	34.8495	-78.8263	Cumberland	FRO	03030005	WS-V	18-(26)	M + 2SM	M	M	M	M	M	Q
B8302000	Cape Fear River at power lines -no road-nr Tolarsville	ups of Smithfield Foods	34.7843	-78.7983	Bladen	FRO	03030005	WS-V	18-(26)	M + 2SM	M	M	M		M	Q
B8305000	Cape Fear River at SR 1316 at Tar Heel	dns of Smithfield Foods, former DWQ ambient stn	34.7448	-78.7856	Bladen	FRO	03030005	C	18-(26.75)	M + 2SM	M	M	M	M	M	
B8306000	Cape Fear River at RM 80 nr Ruskin	ups Specialties Products Technologies, dns Harrison Cr	34.6831	-78.6847	Bladen	FRO	03030005	C	18-(26.75)	M + 2SM	M	M	M		M	Q
B8315000	Harrison Creek at SR 1320 at Burney	voluntary station	34.7317	-78.7164	Bladen	FRO	03030005	C	18-(42)	Q	Q	Q	Q		Q	
B8320000	Cape Fear River at US 701 at Elizabethtown	ups Elizabethtown WWTP	34.6324	-78.6029	Bladen	FRO	03030005	C	18-(26.75)	M + 2SM	M	M	M		M	Q
B8339000	Cape Fear River above L & D 2	dns Elizabethtown WWTP	34.6270	-78.5780	Bladen	FRO	03030005	C	18-(26.75)	M + 2SM	M	M	M	M	M	
B8340100	Turnbull Creek at US 701, NC 53, and NC 41 nr Elizabethtown	voluntary station	34.6470	-78.5567	Bladen	FRO	03030005	C	18-46	Q	Q	Q	Q		Q	
B8340130	Cape Fear River at RM 70 nr Elizabethtown	dns Turnbull and Browns Creeks	34.6246	-78.5505	Bladen	FRO	03030005	C	18-(26.75)	M + 2SM	M	M	M		M	
B8340650	Cape Fear River at RM 55-no road-nr Bladen Springs		34.5352	-78.4398	Bladen	FRO	03030005	WS-V	18-(49)	M + 2SM	M	M	M		M	
B8348000	Cape Fear River at SR 1730 Elwell Ferry Road nr Carvers		34.4740	-78.3690	Bladen	FRO	03030005	WS-IV	18-(53.5)	M + 2SM	M	M	M		M	
B8349000	Cape Fear River above L & D 1 nr East Arcadia		34.4060	-78.2943	Bladen	FRO	03030005	WS-IV CA	18-(58.5)	M + 2SM	M	M	M	M	M	

1.Field Measurements include: Temperature, Dissolved Oxygen, pH, and Conductivity. M=Monthly, M+2SM=Monthly with twice monthly summer sampling, Q=Quarterly. Summer includes the months of May, June, July, August and September. Twice monthly samples are to be collected at least ten days apart except when extenuating conditions arise.

2.Nutrient sampling includes: Ammonia as N (NH3), Nitrate/Nitrite as N (NO2/NO3), Total Kjeldahl Nitrogen (TKN), and Total Phosphorus as P (TP).

APPENDIX A

SAMPLE COLLECTION AND ANALYSIS

Sample Collection Procedures

Sample collection shall be performed by trained personnel employed by NC DWR-certified laboratories in accordance with the DWR Monitoring Coalition Program Field Monitoring Guidance Document (November 2017) and subsequent documents. The Field Monitoring Guidance Document can be found on the web at: http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/ecosystems-branch/monitoring-coalition-program. Alternate collection procedures require the approval of the DWR Coalition Coordinator prior to use.

Laboratory Analysis

All laboratory analyses shall be performed at a DWR-certified laboratory using approved methods as prescribed by section 40 of the Code of Federal Regulations part 136 (40 CFR part 136) or other methods certified by the DWR Laboratory Certification Branch (http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch) or the Director of DWR. 40 CFR Part 136 can be accessed on the web at http://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/rules-regulations.

Reporting levels will be at least as stringent as the reporting levels used by the DWR Laboratory. For guidance purposes Table 3 lists target reporting levels for each parameter based on the reporting levels of the DWR Laboratory. The lowest possible analytical limits for all the parameters should be pursued.

TABLE 3
DWR Laboratory Reporting Limits

Parameters	Target Reporting Level	Comments
Water Temperature		Resolution to 0.1 degree Celsius
Dissolved Oxygen		Report results to the nearest 0.1 mg/L.
pH		Report results to the nearest 0.1 pH units.
Specific Conductivity		Report results to the nearest whole µmho/cm at 25 ºC.
Turbidity	1.0 NTU	
TSS	6.2 mg/L	
Fecal Coliform	1 colony/100 mL	At least 3 dilutions should be used to achieve optimum colony counts per membrane filter of 20-60 colonies.
Chlorophyll *a*	1 µg/L	Report Chlorophyll *a* values free from pheophytin and other chlorophyll pigments. Analysis by HPLC is not approved by DWR.
Ammonia (NH3 as N)	0.02 mg/L	Address distillation requirement. See 40CFR136 Table II footnote.
Nitrate + Nitrite as N	0.02 mg/L	
Total Kjeldahl Nitrogen as N	0.20 mg/L	
Total Phosphorus as P	0.02 mg/L	
Hardness	1.0 mg/L	

Data Qualification Codes

When reporting data, the DWR's data qualifier codes must be used to provide additional information regarding data quality and interpretation. The current set of qualifier codes to be used is provided in Table 4. Review the data remark codes at least annually and utilize the most current set, as codes are subject to change. Contact the Coalition Coordinator for a current copy of the codes.

Table 4
Data Qualification Codes for Use with Coalition Data

Symbol	Definition
A	Value reported is the mean (average) of two or more determinations. This code is to be used if the results of two or more discrete and separate samples are averaged. These samples shall have been processed and analyzed independently (e.g. field duplicates, different dilutions of the same sample). This code is not required for BOD, coliform or acute/chronic metals reporting since averaging multiple results for these parameters is fundamental to those methods or manner of reporting. 1 The reported value is an average, where at least one result is qualified with a "U". The PQL is used for the qualified result(s) to calculate the average.
B	Results based upon colony counts outside the acceptable range and should be used with caution. This code applies to microbiological tests and specifically to **membrane filter (MF)** colony counts. It is to be used if less than 100% sample was analyzed and the colony count is generated from a plate in which the number of colonies exceeds the ideal ranges indicated by the method. These ideal ranges are defined in the method as: *Fecal coliform or Enterococcus bacteria: 20-60 colonies Total coliform bacteria: 20-80 colonies* 1 Countable membranes with less than 20 colonies. Reported value is estimated or is a total of the counts on all filters reported per 100 ml. 2 Counts from all filters were zero. The value reported is based on the number of colonies per 100 ml that would have been reported if there had been one colony on the filter representing the largest filtration volume (reported as a less than "<" value). 3 Countable membranes with more than 60 or 80 colonies. The value reported is calculated using the count from the smallest volume filtered and reported as a greater than ">" value. 4 Filters have counts of both >60 or 80 and <20. Reported value is estimated or is a total of the counts on all filters reported per 100 ml. 5 Too many colonies were present; too numerous to count (TNTC). TNTC is generally defined as >150 colonies. The numeric value represents the maximum number of counts typically accepted on a filter membrane (60 for fecal or enterococcus and 80 for total), multiplied by 100 and then divided by the smallest filtration volume analyzed. This number is reported as a greater than value. 6 Estimated Value. Blank contamination evident. 7 Many non-coliform or non-enterococcus colonies or interfering non-coliform or non-enterococcus growth present. In this competitive situation, the reported value may under- represent actual density. Note: A "B" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., B1, B2, etc.). Note: A "J2" should be used for spiking failures.
C	Total residual chlorine was present in sample upon receipt in the laboratory; value is **estimated**. Generally applies to cyanide, phenol, NH3, TKN, coliform, and organics.

Symbol	Definition
G	A single quality control failure occurred during biochemical oxygen demand (BOD) analysis. The sample results should be used with caution. 1 The dissolved oxygen (DO) depletion of the dilution water blank exceeded 0.2 mg/L. 2 The bacterial seed controls did not meet the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. 3 No sample dilution met the requirement of a DO depletion of at least 2.0 mg/L and/or a DO residual of at least 1.0 mg/L. 4 Evidence of toxicity was present. This is generally characterized by a significant increase in the BOD value as the sample concentration decreases. The reported value is calculated from the highest dilution representing the maximum loading potential and should be considered an **estimated** value. 5 The glucose/ glutamic acid standard exceeded the range of 198 ± 30.5 mg/L. 6 The calculated seed correction exceeded the range of 0.6 to 1.0 mg/L. 7 Less than 1 mg/L DO remained for all dilutions set. The reported value is an **estimated** greater than value and is calculated for the dilution using the least amount of sample. 8 Oxygen usage is less than 2 mg/L for all dilutions set. The reported value is an **estimated** less than value and is calculated for the dilution using the most amount of sample. 9 The DO depletion of the dilution water blank produced a negative value. The cBOD value is greater than the BOD value. Note: A "G" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., G1, G2, etc.).
J	**Estimated** value; value may not be accurate. This code is to be used in the following instances: 1 Surrogate recovery limits have been exceeded. 2 The reported value failed to meet the established quality control criteria for either precision or accuracy. 3 The sample matrix interfered with the ability to make any accurate determination. 4 The data is questionable because of improper laboratory or field protocols (e.g., composite sample was collected instead of grab, plastic instead of glass container, etc.). 5 Temperature limits exceeded (samples frozen or >6°C) during transport or not verifiable (e.g., no temperature blank provided): non-reportable for NPDES compliance monitoring. 6 The laboratory analysis was from an unpreserved or improperly chemically preserved sample. The data may not be accurate. 7 This qualifier is used to identify analyte concentration exceeding the upper calibration range of the analytical instrument/method. The reported value should be considered estimated. 8 Temperature limits exceeded (samples frozen or >6ºC) during storage, the data may not be accurate. 9 The reported value is determined by a one-point estimation rather than against a regression equation. The estimated concentration is less than the laboratory PQL and greater than the laboratory method detection limit. 10 Unidentified peak; estimated value. 11 The reported value is determined by a one-point estimation rather than against a regression equation. The estimated concentration is less than the laboratory PQL and greater than the instrument noise level. This code is used when an MDL has not been established for the analyte in question. 12 The calibration verification did not meet the calibration acceptance criterion for field parameters. Note: A "J" value shall be accompanied by justification for its use denoted by the numbers listed above (e.g., J1, J2, etc.). A "J" value shall not be used if another code applies (e.g., N, V, M).
M	Sample and duplicate results are "out of control". The sample is non-homogenous (e.g., VOA soil). The reported value is the lower value of duplicate analyses of a sample.

Symbol	Definition
N	Presumptive evidence of presence of material; estimated value. This code is to be used if: 1 The component has been tentatively identified based on mass spectral library search. 2 There is an indication that the analyte is present, but quality control requirements for confirmation were not met (i.e., presence of analyte was not confirmed by alternate procedures). 3 This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is less than the laboratory PQL and greater than the laboratory method detection limit. This code is not routinely used for most analyses. 4 This code shall be used if the level is too low to permit accurate quantification, but the estimated concentration is less than the laboratory practical quantitation limit and greater than the instrument noise level. This code is used when an MDL has not been established for the analyte in question. 5 The component has been tentatively identified based on a retention time standard.
Q	Holding time exceeded. These codes shall be used if the value is derived from a sample that was received, prepared and/or analyzed after the approved holding time restrictions for sample preparation and analysis. The value does not meet NPDES requirements. 1 Holding time exceeded prior to receipt by lab. 2 Holding time exceeded following receipt by lab.
P	Elevated PQL due to matrix interference and/or sample dilution.
S	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or matrix spike duplicate (MSD).
U	Indicates that the analyte was analyzed for, but not detected above the reported PQL. The number value reported with the "U" qualifier is equal to the laboratory's PQL*.
UU	Indicates that the analyte was not detected by a screen analysis. The number value reported with the "UU" qualifier is equal to the laboratory's PQL. The number value was determined by a one-point estimation at the PQL, rather than against a regression equation.
V	Indicates the analyte was detected in both the sample and the associated blank. Note: The value in the blank shall not be subtracted from the associated samples. 1 The analyte was detected in both the sample and the method blank. 2 The analyte was detected in both the sample and the field blank.
X	Sample not analyzed for this constituent. This code is to be used if: 1 Sample not screened for this compound. 2 Sampled, but analysis lost or not performed-field error. 3 Sampled, but analysis lost or not performed-lab error. Note: an "X" value shall be accompanied by justification for its use by the numbers listed.
Y	Elevated PQL due to insufficient sample size.
Z	The sample analysis/results are not reported due to: 1 Inability to analyze the sample. 2 Questions concerning data reliability. Note: The presence or absence of the analyte cannot be verified.
Supporting Definitions listed below	
MDL	A Method Detection Limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the true value is greater than zero and is determined in accordance with 40 CFR Part 136, Appendix B.
ML	Minimum Levels are used in some EPA methods. A Minimum Level (ML) is the lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method - specified sample weights, volumes, and cleanup procedures have been employed. The ML is calculated by multiplying the MDL by 3.18 and rounding the result to the nearest factor of 10 multiple (i.e., 1, 2, or 5). For example, MDL = 1.4 mg/L; ML = 1.4 mg/L x 3.18 = 4.45 rounded to the nearest factor of 10 multiple (i.e., 5) = 5.0 mg/L.

Supporting Definitions listed below	
PQL	The Practical Quantitation Limit (PQL) is defined as the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are subjectively set at some multiple of typical MDLs for reagent water (generally 3 to 10 times the MDL depending upon the parameter or analyte and based on the analyst's best professional judgement, the quality and age of the instrument and the nature of the samples) rather than explicitly determined. PQLs may be nominally chosen within these guidelines to simplify data reporting and, where applicable, are generally equal to the concentration of the lowest non-zero standard in the calibration curve. PQLs are adjusted for sample size, dilution and % moisture. For parameters that are not amenable to MDL studies, the PQL may be defined by the sample volume and buret graduations for titrations or by minimum measurement values set by the method for method-defined parameters (e.g., BOD requires a minimum DO depletion of 2.0 mg/L, fecal coliform requires a minimum plate count of 20 cfu, total suspended residue requires a minimum weight gain of 2.5 mg, etc.). Additionally, some EPA methods prescribe Minimum Levels (MLs) and the lab may set the PQL equal to this method-stated ML. Determination of PQL is fully described in the laboratory's analytical Standard Operating Procedure (SOP) document.

*PQL, The Practical Quantitation Limit (PQL), is defined as the lowest level achievable among laboratories within specified limits during routine laboratory operation. The Practical Quantitation Limit (PQL) is "about three to five times the method detection limit (MDL) and represents a practical and routinely achievable detection level with a relatively good certainty that any reported value is reliable." (APHA, AWWA, WEF. 1992. Standard Methods for the Examination of Water and Wastewater, 18th ed.)

** Data remarks are current as of May 4, 2018.

APPENDIX B

DATA FORMAT AND REPORTING REQUIREMENTS

Data Format for Monthly submittals:

Table 5 provides the format of a data submittal spreadsheet. **It is very important that the format of the headings and the number and order of columns is consistent among all monthly submissions.** Do not use commas, tabs, or other common file delimiters anywhere in the submittal spreadsheet table. Do not add, delete, or hide any rows or columns. The first row should contain the column headings only. Column headings must include appropriate information on measurement units (e.g., mg/L, µg/L, cfu/100mL, etc.). The second row must contain the method code. The DWR station number (e.g., B6140000) must be provided as identified in the MOA. The comment column is used for describing pertinent information related to the sampling event or specific samples. Ensure that there are no missing values for station, date, time, and depth. Place all remark codes in a separate column, as demonstrated in Table 5. If there is no result for a particular parameter, leave the cell blank. Delete duplicate rows for stations that were not sampled (e.g., stations sampled twice in summer months). Screen all data for inappropriate or improbable values, such as a pH of 21.2 SU.

Annual Report:

The MCFBA will be required to submit an annual report by April 30th for each year the MOA is in effect. The annual report will formally summarize all data collection activities in the past calendar year and contain at least the following elements:

- Monitoring Station List to include station number, station description, county, accurate coordinates (in decimal degrees to 4 decimal places), stream classification, and 8-digit hydrologic unit code (HUC).
- List of all certified laboratories that conducted work for the coalition in the past year; identify time frames for all laboratories and analysis methods used during the year; and summarize any laboratory certification issues for individual parameters.
- A list of active MCFBA members with authorized representative updates, contact names, email addresses, and phone numbers. Identify the facility name and permit number.
- A list of members whom became inactive during the year and their permit numbers.
- A summary of all quality assurance and quality control issues and any field audits conducted.
- A summary of any significant issues, special studies, or projects.
- Description of any required data collection that was missed, with an explanation.
- Suggested changes to the monitoring program and/or MOA modifications.
- The MCFBA's website address.

Table 5
File Format for Coalition Data Reporting

				Temp (°C)	Temp_rmk	DO (mg/L)	DOrmk	pH (su)	pH_rmk	Conductivity (umhos/cm)	Conductivity_rmk	Fecal Coliform	Fecal Coliform_rmk	Suspended Residue (mg/L)	Suspended Residue_rmk	Turbidity (NTU)	Turbidity_rmk	Chlorophyll_a (ug/L)	Chlorophyll_rmk	NH3_N (mg/L)	NH3_N_rmk	TKN_N (mg/L)	TKN_N_rmk	NO2_NO3_N (mg/L)	NO2_NO3_N_rmk	TP (mg/L)	TP_rmk	Hardness (ug/L)	Hardness_rmk	
Station	Date (m/d/yyyy)	Time (hh:mm)	Depth (m)	10	10rmk	300	300rmk	400	400rmk	94	94rmk	31616	31616rmk	530	530rmk	82079	82079rmk	32209	32209rmk	610	610rmk	625	625rmk	630	630rmk	665	665rmk	900	900rmk	Comments